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AMENDMENTS TO THE CLAIMS:

1.(currently amended): A redundant structure control device for use with an exchange having a Asynchronous Transfer Mode (ATM) switch, an ATM concentrator, a plurality (N+1) of line interface devices to interface with a plurality (N+1) of ATM lines, the (N+1)th line interface device being a spare line interface device, the (N+1)th ATM line being a spare ATM line, the redundant structure control device comprising:

frame tag attaching means, disposed between the ATM lines and the line interface devices, for attaching a routing header containing tag information to [[a]] each frame coming [[in]] from the ATM lines or line interface devices; and giving tag information in said routing header,

frame switching means, coupled to said frame tag attaching means, for switching a destination of said frame to which tag information has been given, frames between the ATM lines and the line interface devices in accordance with said tag information[[.]] given to each frame;

tag changing means, disposed in the ATM concentrator, for changing tag values of ATM cells sent from the ATM switch, the tag values indicating to which line interface devices the ATM cells are addressed; and

routing control means for monitoring states of said line interface devices, setting up said frame tag attaching means and said tag changing means; and when trouble happens at one of said line interface devices, sending out a control signal to said frame tag attaching means so that a frame coming from a line originally connected with said line interface device at which trouble has happened may be switched over to said spare line interface device, and arranging said frame tag attaching means so that a frame coming from said spare line interface device may flow to said line originally connected with said line interface device at which trouble has happened

wherein, in response to troubles with the I-th ATM line and with the j-th line

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interface device where neither i nor j is equal to $(N+1)$, said routing control means sets up said frame tag attaching means and tag changing means such that:

frames coming from and going to the $(N+1)$ th ATM line be supplied to and from the i -th line interface device,

frames coming from and going to the j -th ATM line be supplied to and from the $(N+1)$ th line interface device, and

ATM cells addressed from the ATM switch to the j -th line interface device be redirected to the $(N+1)$ th line interface device.

Claim 2. (canceled)

3.(currently amended): ~~[[A]] The redundant structure control device for an exchange according to claim [[2]] 1, wherein said spare line interface device includes further comprising:~~

memory means, disposed in the $(N+1)$ th line interface devices, for storing path information for all the line interface devices for current use, and

path-information placing means, disposed in the $(N+1)$ th line interface device, for reading path information for ~~[[a]] the failed j -th line interface device at which trouble has happened~~ from said memory means and placing said path information ~~in position, to the $(N+1)$ th line interface device,~~ in accordance with instructions from said routing control means.

4.(currently amended): ~~[[A]] The redundant structure control device for an exchange according to claim [[2]] 1, wherein:~~

~~said spare the $(N+1)$ th line interface device has the same structure as each the other line interface devices device for current use has, have, and~~

~~a call processor is arranged to transfer path information stored in a~~ for the failed j -

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th line interface device at which trouble has happened is transferred to said spare the (N+1)th line interface device by a call processor disposed in the exchange.

Claims 5-7. (canceled):